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Attorney Docket Number: FSP0154
Client Reference Number: 265751USCIP
Title: DYNAMIC QUALITY ADJUSTMENT BASED ON CHANGING STREAMING
CONSTRAINTS
Application Number: 09/653,039

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Claims

Claims 1-52 (Cancelled)

53. (Currently Amended) A method of operating a stream server, the stream server causing data streams to be provided from one or more stored audio/visual files, the method comprising:
receiving a signal from a client device, said signal including an indication of a client requested presentation action that, when put into effect by the stream server, involves reducing a data rate of a first data stream being sent from the stream server to the client device or eliminating the transmission of the first data stream to the client device, the first data stream including data of a first type;
implementing the client requested presentation action, said act of implementing the client requested presentation action including reducing the data rate of the first data stream or eliminating the transmission of the first data stream to the client device; and
determining an amount that a data rate of a second data stream including data of a second type may be increased as a result of an effect on transmission bandwidth corresponding to the reduction in the data rate of the first data stream or the elimination of the first data stream.

54. (Previously Presented) The method of claim 53, wherein
said first type of data is audio data; and
said indication comprises an indication of a client requested action to reduce or eliminate the transmission of audio data to the client device.

55. (Previously Presented) The method of claim 54, wherein said indication comprises:
an indication that audio be muted.

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56. (Previously Presented) The method of claim 53, wherein the act of determining an amount that a data rate of a second data stream may be increased comprises:
determining an amount of bandwidth that is freed up by reducing the data rate of the first data stream or eliminating the first data stream.

57. (Previously Presented) The method of claim 56, further comprising:
including both said first and second streams in a Single Program Transport Stream which is sent to said client device.

58. (Previously Presented) The method of claim 53, further comprising:
including both said first and second data streams in different Single Program Transport Streams, each of said different Single Program Streams being part of a Multiple Program Transport Stream which includes both of said different Single Program Transport Streams.

59. (Currently Amended) The method of claim 53, wherein the act of reducing the data rate of the first data stream or eliminating the transmission of the first data stream to the client device includes:

providing a stream of packets as part of a packet flow to a modified multiplexing device, said stream of packets including data packets which can be sent to the client device in said first data stream;
operating the modified multiplexer to perform a filtering operation on said stream of packets to reduce or eliminate the data rate of the first data stream; and
operating the modified multiplexer to output said first data stream.

60. (Previously Presented) The method of claim 53, further comprising:
providing the second data stream to a device other than the client device.

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61. (Currently Amended) A method of operating a stream server, the stream server causing data streams to be provided from one or more stored audio/visual files, the method comprising:
the stream server providing to a client device a first data stream and a second data stream; receiving a signal from a the client device, said signal including an indication of a client requested presentation action that, when put into effect by the stream server, involves reducing a data rate of a first data stream being sent from the stream server to the client device or eliminating the transmission of the first data stream to the client device, the first data stream including data of a first type;
implementing the client requested presentation action, said act of implementing the client requested presentation action including reducing the data rate of the first data stream or eliminating the transmission of the first data stream to the client device; and
determining whether a third data stream maybe streamed as a result of an effect on transmission bandwidth corresponding to the reduction in the data rate of the first data stream or the elimination of the first data stream.

62. (Previously Presented) The method of claim 61, wherein
said first type of data is audio data; and
said indication comprises an indication of a client requested presentation action to reduce or eliminate the transmission of audio data to the client device.

63. (Previously Presented) The method of claim 62, wherein said indication comprises:
an indication that audio be muted.

64. (Previously Presented) The method of claim 61, further comprising:
transmitting the third data stream to a device other than the client device.

65. (Currently Amended) A method of operating a stream server, the stream server causing data streams to be provided from one or more stored audio/visual files, the method comprising:

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receiving a signal from a client device, said signal including an indication of a client requested presentation action that, when put into effect by the stream server, involves increasing a data rate of a first data stream being sent from the stream server to the client device, the first data stream including data of a first type;

implementing the client requested presentation action, said act of implementing the client requested presentation action including increasing the data rate of the first data stream to the client device; and

determining an amount that a data rate of a second data stream including data of a second type should be reduced as a result of an effect on transmission bandwidth corresponding to the increase in the data rate of the first data stream.

66. (Previously Presented) The method of claim 65, wherein the act of determining an amount that a data rate of a second data stream should be reduced comprises:

determining an amount of bandwidth that is used up by increasing the data rate of the first data stream.

67. (Previously Presented) The method of claim 66, further comprising:

including both said first and second streams in a Single Program Transport Stream which is sent to said client device.

68. (Previously Presented) The method of claim 65, further comprising:

including both said first and second data streams in different Single Program Transport Streams, each of said different Single Program Streams being part of a Multiple Program Transport Stream which includes both of said different Single Program Transport Streams.

69. (Previously Presented) The method of claim 65, further comprising:

providing the second data stream to a device other than the client device.

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70. (Previously Presented) The method of claim 65, further comprising reducing the data rate of the second data stream by:

providing a stream of packets as part of a packet flow to a modified multiplexing device, said stream of packets including data packets which can be sent to the client device in said second data stream;

operating the modified multiplexer to perform a filtering operation on said stream of packets to control the amount of data included in the second data stream, said filtering being performed to reduce the data rate in response to the client required action; and

operating the modified multiplexer to output said second data stream.

71. (Currently Amended) A computer program product, comprising instructions that, when put into effect, enable a stream server device that causes data streams to be provided from one or more stored audio/visual files:

to interpret an indication of a client requested presentation action that will affect the bandwidth requirements of a first data stream having a first type that the stream server is streaming to the client device;

to identify the action from the indication and put the action into effect, with the result that the rate of the first data stream to the client is changed; and

to determine an amount that a rate of a second data stream having a second type should be changed as a result of bandwidth effects of the changed rate for the first data stream.

72. (Previously Presented) The computer program product of claim 71, wherein the instructions to enable the stream server to interpret a client device signal as an indication of a client requested presentation action that will affect the bandwidth requirements of a first data stream comprise: instructions to enable the stream server to interpret the indication as an action that changes the quality of, or eliminates, the audio stream being streamed to the client device.

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73. (Previously Presented) The computer program product of claim 72, wherein the instructions to enable the stream server to interpret the indication as an action that involves changing the quality of, or eliminates, the audio stream being streamed to the client comprise:

instructions to enable the stream server to interpret the indication to mean that the audio stream should be changed from mono to stereo, or vice versa, or that the audio stream should be muted or unmuted.

74. (Previously Presented) The computer program product of claim 71, wherein the instructions to enable the stream server to determine an amount that a rate of a second data stream having a second type should be changed as a result of bandwidth effects further comprise:

instructions to enable the stream server to determine how much bandwidth is freed up or consumed by putting the action into effect.

75. (Previously Presented) The computer program product of claim 71, wherein the instructions to enable the stream server to determine an amount that a rate of a second data stream having a second type should be changed comprise:

instructions to enable the stream server to determine how much to change a rate of a second data stream that is part of the same Single Program Transport Stream as the first data stream.

76. (Previously Presented) The computer program product of claim 71, wherein the instructions to enable the stream server to determine an amount that a rate of a second data stream having a second type should be changed comprise:

instructions to enable the stream server to determine an amount to change a rate of a second data stream that is part of a different Single Program Transport Stream than the first data stream, but which is part of the same Multiple Program Transport Stream as the first data stream.

77. (Previously Presented) The computer program product of claim 71, further comprising:

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instructions to enable the stream server to stream the first data stream to a multiplexing device at a same rate as before the action was put into effect, and to cause the first data stream rate to be changed at the multiplexing device output.

78. (Previously Presented) The computer program product of claim 71, further comprising: instructions to enable the stream server to provide the second data stream to a device other than the client device.

79. (Currently Amended) A stream server system for providing data streams from one or more stored audio/visual files, comprising:

means for receiving a signal from a client device, said signal including an indication of a client requested presentation action that, when put into effect, reduces or eliminates the rate at which the client receives a first data stream having a first type;

means for identifying the action from the indication and putting the action into effect, with the result that the client device receives the first data stream at a reduced or eliminated rate; and means for making a determination of an amount that a rate of a second data stream having a second type may be increased as a result of bandwidth effects of the reduced or eliminated rate for the first data stream.

80. (Currently Amended) A stream server system for providing data streams from one or more stored audio/visual files, comprising:

means for receiving a signal from a client device, said signal including an indication of a client requested presentation action that, when put into effect, reduces or eliminates the rate at which the client receives a first data stream having a first type;

means for identifying the action from the indication and putting the action into effect, with the result that the client device receives the first data stream at a reduced or eliminated rate; and means for making a determination of whether a third data stream may be streamed as a result of bandwidth effects of the reduced or eliminated rate for the first data stream.

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81. (Previously Presented) A stream server system for providing data streams from one or more stored audio/visual files, comprising:

means for receiving a signal from a client device, said signal including an indication of a client requested presentation action that, when put into effect, increases a rate at which the client receives a first data stream having a first type;

means for identifying, the action from the indication and putting the action into effect, with the result that the client device receives the first data stream at an increased rate; and

means for making a determination of an amount that a rate of a second data stream having a second type should be reduced as a result of bandwidth effects of the increased rate for the first data stream.

82. (New) A method comprising:

receiving a signal from a client device, said signal including an indication of a client requested presentation action that, when put into effect, involves reducing a data rate of a first data stream being sent to the client device or eliminating the transmission of the first data stream to the client device;

the act of reducing the data rate of the first data stream or eliminating the transmission of the first data stream to the client device including providing a stream of packets as part of a packet flow to a multiplexing device, said stream of packets including data packets which can be sent to the client device in said first data stream; and

operating the multiplexer to perform a filtering operation on said stream of packets to reduce or eliminate the data rate of the first data stream.